Methods: This retrospective study included 106 consecutive patients with RA in Fuwai cardiovascular disease hospital between January 2010 and January 2012, all of them had been confirmed as coronary disease by coronary angiography. At this sampling 46 RA patients were developed MI. The control group includes 60 subjects who were free of MI. The characteristics of both groups were compared including demographics, traditional cardiovascular risks and laboratory findings. Cases of MI and controls were compared by disease activity variables and risk factors using the student's t test (for continuous variables) or the c^2test (for dichotomous variables). Variables that had a P value of <0.2 in the single factor logistic regression were entered into a multivariate model.
Results: There were no significant differences about demographics, traditional cardiovascular between MI group and control group, such as age, gender, Body Mass Index (BMI), the percentage of hypertension (HT), diabetes mellitus (DM), hyperlipidaemia (HLP) and Smoking. MI group showed increased Erythrocyte Sedimentation Rate (ESR) (P=0.014),C-reactive protein (CRP) (P=0.000) and creatinine (P=0.024) levels than control group. The result of univariate logistic's regression demonstrated that ESR (P=0.009), CRP (P=0.022), CR (P=0.030), lipoproteins (LP-a) (P=0.097) and high-sensitivity C-reactive protein (Hs-CRP) (P=0.009) are associated with increased risk of MI in RA. The result of analysis of multivariate logistic's regression showed that ESR [OR 95% CI 1.024 (1.007-1.043), P=0.007] was an independent risk factor of MI in RA patients.
Conclusions: Patients with RA who developed MI had similar traditional cardiovascular risk factors compared to RA patients without MI, but had significant differences in inflammatory indexes. Inflammation may accelerate atherogenesis and have an excess risk of MI in RA patient with cardiovascular disease.

GW25-e5349

Nebivolol Protects against Myocardial Infarction Injury via Stimulation of beta 3-Adrenergic Receptors and Nitric Oxide Signaling

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Objectives: Nebivolol, third-generation β-blocker, may activate β3-adrenergic receptor (AR), which has been emerged as a novel and potential therapeutic targets for cardiovascular diseases. However, it is not known whether nebivolol administration plays a cardioprotective effect against myocardial infarction (MI) injury. Therefore, the present study was designed to clarify the effects of nebivolol on MI injury and to elucidate the underlying mechanism.
Methods: MI model was constructed by left anterior descending (LAD) artery ligation. Nebivolol, SR59230A (SR), Nitro-L-arginine methylester (L-NAME) or vehicle was administered one day after MI operation. Cardiac function was monitored by echocardiography. Moreover, the fibrosis and the apoptosis of myocardium were assessed by Masson's trichrome stain and TUNEL assay respectively.
Results: Nebivolol administration reduced scar area by 68% compared with MI group (P<0.05). Meanwhile, nebivolol also decreased the myocardial apoptosis and improved the heart function after MI (P<0.05 vs. MI). These effects were associated with increased β3-AR expression. Furthermore, nebivolol treatment significantly increased the phosphorylation of endothelial NOS (eNOS) and the expression of neuronal NOS (nNOS). Conversely, the cardiac protective effects of nebivolol were abolished by SR and L-NAME.
Conclusions: These results indicate that nebivolol protects against MI injury. Furthermore, the cardioprotective effects of nebivolol may be mediated by β_3-AR-eNOS/nNOS pathway.

GW25-e0428

Polymorphisms in the glucokinase regulator gene are associated with serum lipid levels and the risk of coronary artery disease and ischemic stroke

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Objectives: The association of single nucleotide polymorphisms (SNPs) in the glucokinase (hexokinase 4) regulator (GCKR) gene and serum lipid levels is inconsistent. The goal of this study was to test the association between polymorphisms in the GCKR gene and serum lipid levels, and the risk of coronary artery disease (CAD) and ischemic stroke (IS) in the Guangxi Han population and to identify the potential mechanism.
Methods: Genotyping of the GCKR rs1260326 and rs8179206 SNPs in 1736 unrelated subjects (CAD, 584; IS, 555; and healthy controls; 597) was performed by Snapshot technology platform. Coronary angiography was performed in patients with CAD. CAD was defined as significant coronary stenosis (> 50%) in at least either one of the three main coronary arteries or their major branches (branch diameter>2 mm). The patients with is received strict neurological examination and brain magnetic resonance imaging scan. It was diagnosed according to the International Classification of Diseases (9th Revision).
Results: The genotypic and allelic frequencies of rs1260326 and rs8179206 SNPs were not significantly different between controls and CAD or IS patients, or between CAD and IS patients (P>0.05 for all). The subjects with TT genotype of rs1260326 SNP had higher serum low-density lipoprotein cholesterol (LDL-C) levels in controls and higher triglyceride (TG) levels in CAD patients than the subjects with CC and CT genotypes (P<0.05) after adjustment of age, sex, body mass index, blood pressure, alcohol consumption, and cigarette smoking. But this association was not found in the IS patients.
Conclusions: The present study shows that the TT genotype of GCKR rs1260326 SNP is associated with high LDL-C levels in controls and high TG levels in the CAD patients.

GW25-e1092

Relationship between pulse wave velocity and left ventricular diastolic function of hospitalized patients in department of cardiology

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Objectives: To assess the relationship between brachial-ankle pulse wave velocity and left ventricular diastolic function of hospitalized patients in department of cardiology.
Methods: Six hundred fifty-two patients in department of cardiology in Peking University First Hospital were enrolled in the study. They were hospitalized because of cardiovascular diseases during Nov 2012 to Oct 2013. The clinical information and echocardiography were collected. The brachial-ankle pulse wave velocity was measured noninvasively. The patients were divided into four groups according to left ventricular diastolic function: group of normal diastolic function defined as E/A≥0.8, E/ E'≤8; group of mild diastolic dysfunction defined as E/A<0.8, E/E'≤8; group of moderate diastolic dysfunction defined as 0.8≤E/A≤1.5, 8<E/E'<13; group of severe diastolic dysfunction defined as E/A≥2.0, E/E' ≥13. baPWV were compared between four groups. The relationship between left ventricular diastolic function and baPWV was analyzed using spearman method. Logistic regression model was used to correction the factors influencing LV diastolic function.
Results: (1) The baPWV were 1403.09±256.61 cm/s, 1631.03±357.67 cm/s, 1641.02±605.50 cm/s and 1718.85±350.53 cm/s in normal diastolic function group, mild diastolic dysfunction group, moderate diastolic dysfunction group and severe diastolic dysfunction group separately. The baPWV rise with left ventricular diastolic function decreased in four groups and there was statistically significant (P<0.001). (2) The baPWV was significantly negatively correlated with E/A ratio (r=-0.257, P<0.001), and was significantly positively correlated with E/E' ratio (r=0.249, P<0.001). (2) Multiple logistic regression analysis showed: baPWV≥1400 cm/s is a danger factor to left ventricular diastolic dysfunction, the RR values were 1.93 (95% CI 1.09-3.44, P=0.03).
Conclusions: The baPWV is correlated with left ventricular diastolic dysfunction, and it can be a screening method for high risk group with left ventricular diastolic dysfunction.

GW25-e1655

Identifying the predictor of clinical efficacy and safety by genotype vs. phenotype in patients receiving clopidogrel underwent PCI

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Objectives: To evaluate the predictive value of both CYP2C19 genotype and platelet function phenotype grouping methods in clinical outcomes and bleeding events of patients receiving clopidogrel underwent percutaneous coronary intervention (PCI).
Methods: Coronary heart disease (CHD) patients administered in Fuwai hospital underwent elective PCI and received coronary stent implantation were prospectively enrolled during October 2012 to May 2013, who were treated with a 300-mg bolus of clopidogrel before PCI and a 75-mg maintenance dose once daily for 1 year thereafter, in combination with a 100-mg maintenance dose once daily of chronic aspirin therapy. Patients were assigned into groups by genotype of CYP2C19 (extensive metabolizers, intermediate metabolizers, and poor metabolizers) and phenotype of platelet function (clopidogrel responders, semi-responders, and non-responders). The rates of major adverse cardiovascular events, cardiovascular symptom events, and bleeding events were recorded during a follow-up period until 6 months after the last patient first visit and compared among the groups defined previously.
Results: 380 patients received coronary stent implantation were enrolled in this study, including 157 (41.3%) clopidogrel extensive metabolizers, 176 (46.3%) intermediate metabolizers, and 47 (12.4%) poor metabolizers according to the genotype grouping; 98 (25.8%) were responders to clopidogrel, 149 (39.2%) were semi-responders, and 133 (35.0%) were non-responders according to the phenotype grouping. The highest cardiovascular symptom events rate was observed in the poor metabolizers (34.0%) as compared to the intermediate metabolizers (19.1%, HR=2.126, 95% CI 1.131-3.997, P=0.019) and the extensive metabolizers (15.4%, HR=2.772, 95% CI 1.359-5.655, P=0.005) when grouping by the CYP2C19 genotype, without a statistical difference of the major adverse cardiovascular events rate or bleeding events rate. The highest bleeding events rate was observed in the clopidogrel responders (32.7%) as compared to the semi-responders (19.0%,